The Bisbee Daily Review

SECTION A

1915 Mining Edition

Arizona Resumes Her Place at Head of All Copper Producing States of the Union; Industry Is on Its Way to New Records

Shackles Put on Production by War's Alarm Thrown Off to Meet Return of Prosperity

After a record production of $70,000,000 in 1913, the mining industry in the State of Arizona started out the year 1914 with a steady increase, which bid fair to make another record for that year. The declaration of war, however, in the European countries put an uncertainty into the business, for a period of from 30 to 60 days, production almost ceased with the larger producers and did cease and fail to start with the small producers. Even though many of the mines started within two months after curtailing operations, it was several months and in fact way towards the end of the year before production was back to normal. As has since been proven, it was not at all necessary to have the mines shut down, but the conditions at that time indicated that there would be a great lessening of the amount of copper exported, and for a period this was true, as the exports on copper decreased from 826,000,000 pounds in 1913 to about 350,000,000 pounds in 1914. With the curtailing of the exports, it was evident that unless the mines and smelters could operate on their surplus and retain their stocks they would be forced to shut down. It was considered that even this method was unsafe, as the market for this excess stock was not certain. Although many of the mines retained their organization, and merely cut down to the lowest operating capacity, it took considerable time to get them back to normal conditions.

The Arizona mines in 1914 yielded gold, silver, copper, lead and zinc, valued at $59,9.956,029, against $70,875,027 in 1913, a decrease of $10,918,998. Other states suffered similarly. The production in Montana was the smallest in many years, in fact the smallest since 1898. In Michigan the production in 1913 was below normal because of labor troubles, so that in 1914 there was a slight increase of 5,000,000 pounds. Nevada, California and Tennessee decreased in about the same proportion as did Arizona.

The gold produced in Arizona in 1914 amounted to 202,166.62 ounces, valued at $4,179,155, an increase of $155,244. Of this output, $30,140 came from placers, $3,092,702 from dry or siliceous ore, and $1,051,014 from copper ore. The largest production of gold was from Mohave County—$1,891,214 in 1914, against $1,874,547 in 1913. Gold production from ores amalgamated amounted to $259,062, and from ores cyanided $2,157,080. Concentrates contained $318,166 and ores shipped to smelters $1,410,606.

There is a very considerable unrecorded production from placer gold, as many of the gold placers of the state are worked in a small way by the Mexicans and Indians who do not make any report on the same. The declaration of war did not influence the gold mining other than to stimulate it, as the demand for gold did not decrease.

Silver production from Arizona ores and placers increased from 3,945,091 ounces, valued at $2,284,647 in 1913 to 4,377,994 ounces valued at $2,421,031 in 1914. Of this amount 2,604,371 ounces came from copper ore, 1,133,976 ounces from dry or silicious ore, and 493,266 ounces from lead ore. Bullion recovered from gold and silver ores, principally by cyanidation, yielded 617,049 ounces of silver in 1914; concentrates produced 423,982 ounces; and crude ore shipped to smelters contained 3,280,667 ounces. Cochise county mines produced 2,753,953 ounces in 1914 against 2,127,191 ounces in 1913, and Yavapai County 786,917 ounces in 1914, against 854,049 ounces in 1913.

In as much as practically all of the silver of Arizona is produced in conjustion with the gold or the copper, this was influenced by the European war but little.

The copper output from Arizona ores, principally from crude ores and concentrated, decreased from 407,923,402 pounds, valued at $63,228,127 in 1913 to 393,017,400 pounds, valued at 352,271,314 in 1914, but Arizona continues at the head of the list of copper producing states. The concentrated produced contained 158,985,306 pounds of the output in 1914, and the crude ore shipped to smelters amounted to 233,047,975 pounds. Cochise County, Warren or Bisbee district, being credited with the principal part, produced 155,429,887 pounds of copper, against 165,103,854 pounds in 1913. Greenlee County, with copper Mountain and Greenlee districts of the Clifton-Morenci region the principal producers, yielded 65,555,501 pounds of copper, against 69,466,560 pounds in 1913. Yavapai County, including the Verde district, produced 34,057,952 pounds of copper, against 38,719,973 pounds in 1913 and 34,043,005 pounds in 1912. Gila County, including Globe and Miami district, produced 73,488,162 pounds of copper in 1914, against 71,609,847 pounds in 1913 and 63,969,423 pounds in 1912. The so-called low-grade schist and porphyry ores found in Pinal and Gila counties yielded 95,483,293 pounds of copper against 87,072,406 pounds of copper in 1913 and 68,753,633 pounds in 1912. The copper output of Greenlee County came largely from the same class of deposits.

The lead in Arizona ores in 1914 which were shipped to smelter outside the state, amounted to 15,003,068 pounds, valued at $585,120, against 16,144,772 pounds in 1913, valued at $710,370 and 6,086,442 pounds in 1912. Most of the lead ore is produced in the vicinity of the copper mines in the Warren or Bisbee district in Cochise County, which yielded ores containing 9,331,116 pounds. Mohave County followed with 3,718,057 pounds; Pima County with 769,145 pounds and Santa Cruz county with 403,272 pounds. Concentrates yielded 4,306,977 pounds of lead and 10,966,091 pounds of lead were contained in crude ore shipped to smelters. Lead is mined separately in Arizona but little, being mostly in conjunction with other ores.

The spelter recovered from Arizona zinc ores in 1914 amounted to 9,428,067 pounds valued at $527,972 in 1913. Mines producing most of the zinc ores are situated at Union Pass and Chloride in Mohave County, and the ores produced are estimated to have contained 9,532,050 pounds of spelter in 1914, against 7,031,400 pounds in 1913 and 8,304,462 pounds in 1912. Produc-

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"Arizona First" Is Suggestion To Sightseers

"See Arizona First". This is the first duty of every American. And now that we are really going to see what America is like let us take a glance at the Southwest corner. The section near the Mexican border where the oldest civilization on this continent of ours began. Arizona. The land of sunshine. Supposed to be the land of little rain. Where water is wealth. Where everyone lives outdoors.

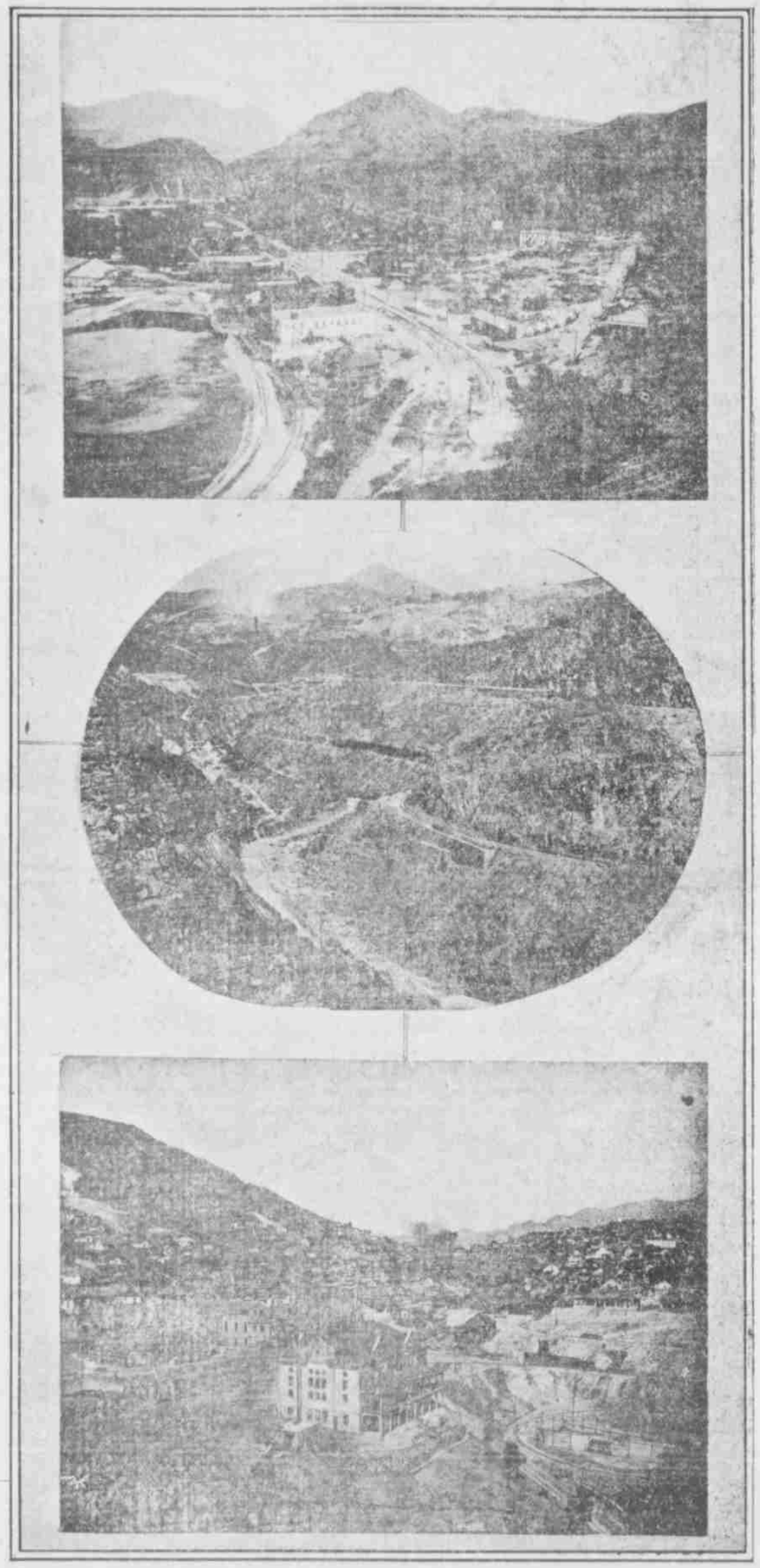
There is a great deal of misinformation regarding this section of our continent. To one who sees the State only from the rear end of a Pullman train the outlook is not always cheerful. But get into the back country, and then the possibilities of the State are realized, and there appears to the observing eye a limitless resource in endless variety.

Great copper camps of the state are turning out over a million pounds of the red metal every day. And great ranges are carrying thousands of herds of cattle and sheep. Forests of pine covered mountain ranges and broad plateaux. Wherever water can be diverted it is made to serve man through irrigation and when the water reaches the soil there results a growth of vegetation that is wonderful. Nearly everything can be grown in Arizona.

Elevations vary from the snow clad peaks of the San Francisco mountains to the low levels of the desert plains. The air is always dry. There is no humidity and the heat though registering high upon the thermometer is not inconvenient.

The attractions for tourists are unlimited. The Grand Canyon, the Petrified Forest. Ice caves. Cliff dwellings. Cathedral cave and Cave houses are all worth visiting. Indian pueblos perched like eagle nests atop steep sided mesas, overlooking the surrounding valleys from heights of six hundred to a thousand feet. Enormous Indian reservations. Fine trout streams. Good hunting grounds and fishing streams and lakes and finally and best the great, smiling valleys, rich with every kind of plant and tree life. Green fields of alfalfa stretching for miles. Orchards or orange, live and deciduous fruits. Fat cattle knee deep in lush pastures. Canals and ditches brim full of life giving water. Feathery palms and umbrella trees with silvery cottonwoods border in the highways, and everywhere great clusters of roses red, red, red.

This is in brief, the Salt River Valley, where the great irrigating system, the chief work of which is the Roosevelt Dam, has turned the desert into a land flowing with milk and honey. It is not a dream. There are thousands of busy hives where bees are



Upper Clifton—Center, Between Clifton and Morenci—Lower, Morenci.

boarding the honeyed sweetness extracted from fruits and flowers. From the blossoms of alfalfa. From the bloom that is on the desert plants even, and bringing it all to the service of man. There are thousands of ostriches grazing in the fields like so many cattle. There are date-palms loaded with giant clusters of delicious fruit and everywhere there are signs of peace and prosperity.

Not all of this has been acquired without a struggle. The effort made, has been long and strenuous. Extraordinary conditions must be overcome but the success that crowns the work is not less than the task accomplished deserves. Pheonix, the capital city of the State, is worthy of the people who have made Arizona. No state building in any part of our country has a more beautiful setting. The gardens and grounds surrounding the State House are alone worthy of a special trip to see. In midwinter when snow and ice make existence a strenuous matter in les favored sections of the country these grounds are rich in perfume from countless flowers. Masses of color, myriads of bloom, and birds singin'. The ever blue sky, the warm sun, and fleecy clouds to make a color contrast.

All branches of education are well provided for, and everywhere the best development is given to the call of learning.

The health giving qualities of the climate are well known. However, it is no place for the penniless. Nature is kind in providing much that will be of benefit to the sick, but good food and other comforts are only to be had at a fair price. In any growing community the cost of living is in ratio with the prosperity. The country throughout parts of all Arizona is prosperous, generally speaking there is an ample supply of labor, especially light labor but in the farming lines there are plenty of openings to be had and they are well worth investigation.

The small farm is at its best when operated under an irrigation system and here in the Salt River Valley all conditions are in favor of twenty acre farms. Soil is right, climate is an aid to cultivation and the worker has water when he wants it. "Safety first" is just as applicable to farming as to any oter industry, and water when it is required, provides one big crop insurance policy.

"Back to the land" is having a stronger appeal in the Southwest than in many other sections of the country. The operation of farming under the ideal climatic conditions makes for convenience. No heavy winter labor when the weather works a hardship. Instead, a comfortable working weather practically continuous the year round. The farmer cuts his crops of alfalfa in December and in February under a smiling sun. Under such conditions farming is very attractive.

We want to see America First, and no better place to start with, than the great Southwest. It is full of interesting things. It was in the Southwest that civilization on this continent began and in many ways the section still leads in matters of progress and prosperity.

Bisbee has the most equable climate in Arizona. Only 17 degrees variation between day and night, is the average

Search for Arizona's Treasure First Started in Southern Section of State by Indians

The first mining in the southern part of Arizona of which any record is available was done before the Spanish conquest of Mexico in the sixteenth century, according to F. C. Schrader of the United States geological survey. This mining was done by the semi-civilized ancestors of the Papago Indians, who inhabited the Santa Rita mountains and the region adjoining on the west, once known as the Papagueria. Here are the oldest mines on the Pacific slope north of Mexico.

This silver mining region in Arizona is the northwest continuation of the great silver mining region of Mexico, which, notably in the states of Chihuahua, Durango and Sonora, produced millions of dollars worth of silver for centuries.

From central Mexico, search for the precious metals was pushed north westward by the Mexicans in the northern part of Mexico in the early part of the seventeenth century or before. In the northern part of Sonora, about twenty miles southwest of Nogales, is the Planchas de Plata district, one of the oldest and richest mineral regions in North America, celebrated for its great production and large nuggests or masses, of native silver. The largest mass, said to have weighed 2700 pounds, was discovered in 1736 and caused great excitement and a stampede to the region.

Missionaries Come First.

The first civilized men to visit the Arizona region were the Spanish Jesuit missionaries, who from Sonora in 1687 explored the valley of the Santa Cruz river and considerable portions of the Gila and San Pedro valleys. Their reports of the fertile valleys and the mineral wealth of this new country led to the establishment on the Santa Cruz of the missions of San Xavier del Bac, Tumacacori, Santiago and San Cayetano, the town of Tubac, and further north, that ofTucson. The first mission in Arizona was established at Guevavi or Guebabi about thirty miles south of Tucson, in 1687, and those of San Xavier and Tumacacori soon followed.

These missions have an important bearing on the mining history of this region in that their founders and keepers, the Jesuit fathers, were in a sense the pioneer miners of the country and conducted mining operations with a considerable force of men, mostly impressed Indians, in connection with their missionary work. That they must have operated on a considerable scale is indicated by the extent of the workings and the slag dumps still seen near the mission ruins. They named the old Salero and the other mines in the Santa Rita region.

The San Xavier mission, nine miles south of Tucson, founded prior to 1694 and still standing, an object of visit to tourists, is described as a large church with imposing architecture, in which $40,000 in solid silver, taken from the mines in the Santa Rita mountains nearby, was used to adorn the altar.

Real Conquest Begins.

Further explorations and discoveries were made about 1810 and after that date conquest and settlement of the country were prosecuted with vigor both by the Jesuits and by the Spanish government. The missions and settlements were repeatedly destroyed by the Apaches and the priests and settlers massacred or driven out, but they were as often reestablished, and up to 1820 the Spaniards and Mexicans continued to work many valuable mines. The best known mine about this time, or a little later, was the Santa Rita del Cobre, which was worked probably about the middle of the thirties and produced ore yielding 75 per cent of copper.

After the Gadsden purchase, made in 1855, Americans, including Poston Nowry and others, began to enter the region, eastern capital was enlisted, and more prominent mining settlements were made in the Santa Rita and Patagonia mountains as early as 1855, about which time the historic Mowry mine was located. In 1857 the country between the boundary and Calabazas was reported by the Emory boundary survey to be full of prospestors from California.

First Companies Form.

In 1856 an exploring party, outfitted at San Antonio, Texas, arrived at Tubac and proceeded to examine the silver mines in the Santa Rita and adjoining mountains, and in 1857 the Sonora Mining and Exploring company and the Arizona Mining Company were formed for the purchase and delopment of these mines. About the same time an association formed in Cincinnati, Ohio, with offices also in Tubac, which by this time had a population of about 500, acquired title to valuable mining property in the Atascosa mountains on the west and the Santa Rita mountains on the east, including the old Salero mines of the Jesuits. Here, too, was the headquarters of the Sonora Mining and Exploring company, of which Major Heintzelman of the United States army was president. Its operations were conducted mostly north of Tubac, the principal property being the Heintzelman mine, which, in 1857, had opened to a depth of fifty feet and had on the dump $20,000 in silver sulphide ore averaging about $1400 to the ton. In 1860, mine was still producing annually about $2500 in silver, which was cast into small bars and used as a circulating medium. So rich was some of the ore from this and adjoining regions that it paid for transportation on muleback more than 1000 miles to the City of Mexico.

Smelters Are Installed.

In 1858 the Santa Rita Mining company was organized for operating both old and new properties in the Santa Rita mountains; the Mowery, Trench, Compangre, and other veins were being worked in the Patagonia mountains, and smelters being installed for the reduction of ores. The ore of these mines, especially that of the Mowry, was said to be of high value, yielding, besides the large percentage of silver, about 50 per cent of lead, which was in demand by the neighboring companies to be used as flux in reducing their less favored ores. The Santa Rita and the Patagonia mountains contain a score or more of the crude adobe smelters or their ruins, examples of which may be seen in Alum canyon, at the Jarillo mine, southwest of Patagonia, and at Duquesne, near the Mexican border. They were mostly built by Americans after the Gadsden purchase and are an adaptation of the old Mexican fundicion in efforts to extract the metals from the ores. In short, during the middle and late 50's, the mining industry of this region was developed with considerable success and brilliant prospects, until interrupted by the Civil war, the withdrawal of the troops and the triumphs of the Apaches.

Indians Let Loose.

To protect the settlers against the Indians old Fort Buchanan, of which Fort Crittenden is the successor, was built and garrisoned at the head of Sonoita Creek, near the center of the area, in 1855 and 1856. Later the mining industry derived material benefit from the semi-monthly stage line and the Butterfield semi-weekly mail route between San Antonio, Texas, and San Diego, Cal., via Tucson, from 1857 to 1861. The breaking out of the Civil War, with the withdrawal of the garrison and the consequent atrocities of the Apaches and the abandonment of the camps put an almost abrupt stop to the mining industry of Arizona and for years retarded the development of the territory. After the subjugation of the Indians the industry in the Santa Rita region was successfully revived in the early or middle 70's by Col. W. J. Boyle and others and ores from the croppings, it is reported, were found to range from $20 to several hundred dollars, and from the shafts from $50 to many thousand dollars to the ton. This revival, besides involving the reoccupation of most of the old and the exploitation of many new properties, including the opening of the east slope of the Santa Rita mountains of a new lead and gold region, comprising the present Wrightson and Greaterville districts, the latter of which soon produced considerable placer gold.

Railroads Open Way.

The completion of the Southern Pacific in 1879 and that of the Atlantic and Pacific in 1883 were potent factors in opening the territory to immigration and capital. Before the advent of the railroads ore that would not yield $100 per ton was passed by as worthless.

After the building of the railroad the Empire district was opened and to Total Wreck mine, which was rapidly developed to a depth of 260 feet with much lateral work, soon became the foremost bullion producer in the territory. The average mill test of the ore, which was chiefly silver chloride carrying considerable carbonate of lead, manganese and iron, was about $60 to the ton. A 20-stamp 70-ton mill operated on the ground extracted 84 per cent of the metal contents and during five months had produced $459,060, the cost of mining and milling being about $8 per ton. In the Helvetia district the promising

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